

# NORTHWOODS JOURNAL – NOVEMBER 2021

*A Free Publication about Enjoying and Protecting Marinette County's Outdoor Life*

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## As the EPA Pursues PFAS Standards, Industry and Residents Are at Odds Over State Regulation

[www.wpr.org/epa-pursues-pfas-standards-industry-and-residents-are-odds-over-state-regulation](http://www.wpr.org/epa-pursues-pfas-standards-industry-and-residents-are-odds-over-state-regulation)



Wisconsin residents affected by PFAS contamination say the Biden administration's recently announced strategy to address harmful forever chemicals doesn't go far enough and highlights the need for state standards. But industry officials argue state regulators should wait for the U.S. Environmental Protection Agency to set federal drinking water regulations. The EPA announced a [broad plan](#) last week to address perfluoroalkyl and polyfluoroalkyl substances that have been found in products like non-stick cookware, firefighting foams and food packaging. The chemicals don't break down easily in the environment and have been linked to serious health conditions, including kidney and testicular cancers, thyroid disease and fertility issues.



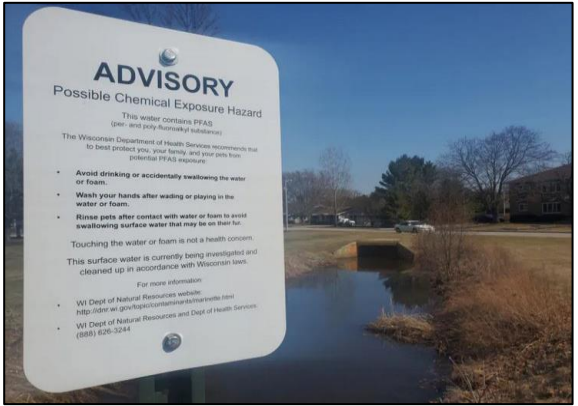
The EPA's plan would set federal drinking water standards in the next two years for two of the most widely studied PFAS chemicals: PFOA and PFOS. The strategy also seeks to prevent PFAS releases into the environment and speed along clean up and disposal of the chemicals at military and industrial sites.

"What it will all come down to for states and for communities like ours are tangible action," said Kayla Furton, supervisor for the Town of Peshtigo.

Furton, who is a mother of three, is among many residents that have been [affected by PFAS contamination](#) stemming from Tyco Fire Products' fire training facility in Marinette. While she feels federal action is long overdue, Furton said it's a step in the right direction that underscores the need for the Wisconsin Department of Natural Resources to set standards for PFAS.

"Not only do I think that the DNR needs to continue in the rulemaking process (to set standards), but Wisconsin needs to enact meaningful actual legislation pertaining to PFAS," said Furton.

The DNR is in the process of [crafting groundwater, drinking water and surface water standards](#) for a mix of PFAS chemicals. State health officials have proposed a combined groundwater standard of 20 parts per trillion for PFAS chemicals that include PFOA and PFOS. The EPA has set a federal health advisory level of 70 parts per trillion, which is unenforceable.



Signs posted along a ditch running through a Southern Marinette, WI neighborhood warn against exposure to the forever chemicals known as PFAS (Photo by John McCracken/ for The Midwest Center for Investigative Reporting).

The state's largest business lobby, Wisconsin Manufacturers and Commerce, said in a statement that the state agency should "pause" its rulemaking and let the EPA set a national drinking water standard. "WMC has consistently stated that regulation of PFOA and PFOS is warranted based upon the scientific evidence, and WMC believes a national standard is preferable to a patchwork of conflicting state standards," said Scott Manley, executive vice president of government relations for WMC.

WMC has filed two separate lawsuits challenging the DNR's authority to regulate PFAS in the absence of state and federal standards. The group has also lobbied for changes to PFAS regulations in emails to Natural Resources Board chair Fred Prehn, according to the Milwaukee Journal Sentinel.

Environmental groups like Clean Wisconsin argue a complementary approach between federal, state, local and tribal governments is needed to address the chemicals. "This isn't a case where the federal government is stepping up and so the state can step back," said Scott Laeser, water program director for for Clean Wisconsin. While the DNR is encouraged by federal action, the agency doesn't plan to wait for federal PFAS regulations. The agency's

*Continued next page*

## Facebook Page Update!

**The Marinette County Land Information Department's Facebook page has been unpublished for reasons unknown. Please be patient with us as we try to figure out why Facebook shut down our page.**

## FACEBOOK JAIL

He was doing fine,  
He was doing swell,  
Till a Facebook bot,  
Threw him into jail.  
So no more posts,  
Or comments too,  
No more sharing,  
He's feeling so blue.

Have you  
been there?  
I was just being  
a bad, bad boy.





## Help Remove Gypsy Moth Egg Masses This Fall

<https://dnr.wisconsin.gov/topic/foresthealth/gypsymoth>

The Wisconsin Department of Natural Resources is asking the public for help this fall by looking for and disposing of egg masses produced by adult gypsy moths during the summer.



Gypsy moths are invasive pests that lay egg masses that are tan-colored lumps about the size of a nickel or quarter. Each mass contains hundreds of eggs and can be found on trees, buildings and other outdoor objects, including firewood piles and birdhouses.

**In 2021, gypsy moth populations increased for a second consecutive summer due to weather conditions that allowed more caterpillars to survive and become adult moths.**

Populations usually grow fastest and are often first noticed on:

- Preferred tree species (oak, crabapple, birch, etc.) growing on mowed lawns
- Large oaks with rough bark, especially on or adjacent to mowed lawns
- Dry sites with sandy soil and abundant oak

Checking for egg masses helps residents predict the number of gypsy moths for the following summer and take necessary action. You can discover more egg masses once leaves have fallen from the trees. Treating or removing masses in the fall prevents large amounts of eggs from hatching into hungry, leaf-eating caterpillars in the spring. Large amounts of these caterpillars can be a tremendous nuisance that could even kill trees.

To treat or remove egg masses, spray the masses that are safely within reach with horticultural oil or gently scrape them into a container of soapy water to soak for a few days before being discarded in the trash. Do not use motor oil or other lubricants, as these can harm the tree and be a pollutant. Old masses with no viable eggs will appear faded and feel spongy when touched.

If weather conditions are favorable again in 2022, the most noticeable increase in caterpillar numbers would likely occur in southern Wisconsin counties, where conditions were driest this past spring and summer.

Visit the Wisconsin gypsy moth website for information about egg mass oiling and removal, physical controls, population survey methods and insecticide applications to high-value host trees. An arborist or forester may also be a good resource for anyone dealing with gypsy moths.

For more information, contact Bill McNee, DNR Forest Health Specialist at 920-360-0942 or email [bill.mcnee@wisconsin.gov](mailto:bill.mcnee@wisconsin.gov).

## PFAs, from page 1

spokesperson, Sarah Hoyer, noted states oversee groundwater standards — not the EPA.

"Our groundwater standards regulate what is protective to discharge to groundwater, but also what are the cleanup levels once groundwater is impacted," said Hoyer in an email. "They provide private well owners and bottled water companies the standard for what we believe is protective for humans to consume."



Hoyer highlighted that it will be years before the EPA finalizes standards, adding that the DNR's process offers businesses and communities certainty now over limits needed to protect public health.

### EPA plan would designate PFAS as hazardous substances

Other states like neighboring Michigan have already [set their own PFAS standards](#) in groundwater and drinking water. Activists emphasize that federal standards are necessary as the Department of Defense has pushed back against state efforts to test and clean up PFAS at military sites. That includes Laura Olah, who lives near the Badger Army Ammunition Plant near Baraboo. "Most (DOD sites) have not completed investigations," said Olah, executive director of Citizens for Safe Water Around Badger.

In Wisconsin, military sites like Fort McCoy have reported extremely high concentrations of PFAS, recording levels as high as 120,000 parts per trillion. The Wisconsin National Guard has been taking steps to address PFAS contamination at Volk Field near Camp Douglas, Truax Field in Madison, and General Mitchell International Airport in Milwaukee.

The federal government is now conducting cleanup assessments at 700 DOD and National Guard sites nationwide. Under the EPA's plan, the agency will designate certain PFAS chemicals as hazardous substances under the federal Superfund law or Comprehensive Environmental Response, Compensation, and Liability Act, or CERCLA. That will allow the agency to force polluters to pay for and clean up contamination, including at DOD sites where the military used firefighting foam that contains PFAS.

In a statement, Wisconsin National Guard spokesperson Maj. Joe Trovato said they have and will continue to follow the process for PFAS remediation under federal law. "The CERCLA process is driven by federal law and associated funding is prioritized based on site investigations nationwide," wrote Trovato in an email. "We will continue to adhere to the CERCLA process and will remain actively engaged with each step and with our partners at the local and state level to keep the process moving forward."

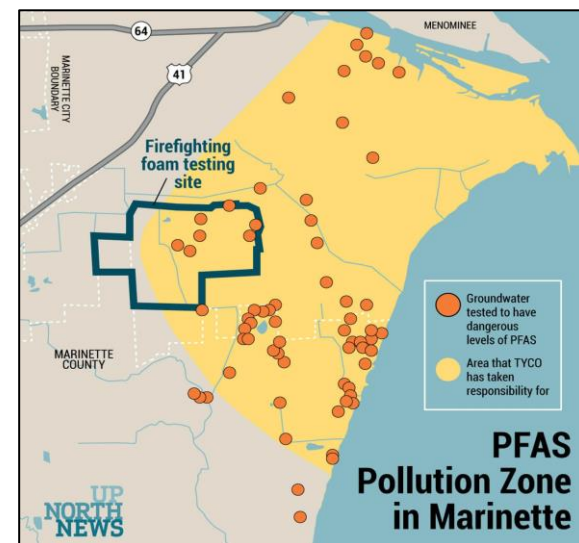
### EPA calls for more testing, but doesn't regulate PFAS as a class

Despite the EPA's sweeping strategy to address PFAS, both Furton and Olah say it's disappointing

that the agency has not moved to [regulate PFAS as a class](#) of chemicals. PFAS represent thousands of individual substances, most of which have not been studied. "It'll be centuries before we would ever set standards, which is really discouraging because EPA allowed all of these PFAS compounds to be on the market, saying they were safe," said Olah. "But, the report that they issued says we have very little information."

Scientists argue research supports regulating PFAS as a class. Industry has long opposed the approach, including WMC. Manley said the business group is encouraged the EPA is acknowledging "that each PFAS substance has unique characteristics and that each PFAS compound has a unique public health profile."

The EPA says it's doing research to understand similarities and differences between PFAS chemicals and whether to address groups of the chemicals through regulation. Olah would also like to see more testing of public water supplies for the presence of PFAS, noting most of Wisconsin's roughly [11,000 water systems](#) haven't been tested. In July, the DNR said 90 public water supplies had been tested for the chemicals.



The EPA's plan calls for all water systems serving 3,300 or more people and 800 smaller public water supplies to collect PFAS samples beginning in 2023, but it relies on significant funding from Congress. Olah fears the plan targets larger systems and leaves people served by small rural water utilities without the ability to gauge their risk of exposure.

Industry, municipal and water groups in Wisconsin have pushed back against efforts to test for and regulate PFAS. Gov. Tony Evers proposed funding for testing and 11 new positions to address the chemicals in his budget, as well as a \$10 million grant program for communities. Republican lawmakers on the state's budget-writing committee stripped most of Evers' proposals from the 2021-23 budget.

### For more information about PFAS visit:

- [www.epa.gov/pfas](http://www.epa.gov/pfas)
- <https://dnr.wisconsin.gov/topic/PFAS>
- [www.dhs.wisconsin.gov/chemical/pfas.htm](http://www.dhs.wisconsin.gov/chemical/pfas.htm)
- [www.cleanwisconsin.org](http://www.cleanwisconsin.org)
- [www.nrdc.org/protect-people-toxic-pfas-chemicals](http://www.nrdc.org/protect-people-toxic-pfas-chemicals)
- <https://investigatamidwest.org/2021/04/29/the-middle-of-a-massive-contamination-residents-of-wisconsin-region-struggle-with-aftereffects-of-dangerous-forever-chemicals/>





## What is an Indicator Species?

<https://obdk.com/blogs/owls-wolves-and-bears-oh-blog/sept-10-bears-12-dens-of-knowledge>



Some animal species are considered *indicator species*. These are animals that can give us insight into how the ecosystem is doing overall, depending on how well they're doing themselves. They can indicate changes in the environment and whether or not it's a healthy one.<sup>1</sup>

Indicator species can also give us insight into their ecosystem simply by being present or not present within it.<sup>2</sup> Indicator species can be plants, like mosses, or animals like river otters.<sup>1&2</sup>

River otters give us insight into how healthy a freshwater ecosystem is. If there is any problem, river otters are usually the first to be affected because they're at the top of the food chain. For example, if there's mercury pollution in an environment they'll be the first to show signs of poisoning from it.<sup>2</sup>



Another indicator species are wood storks. They indicate whether or not everglade ecosystems are healthy. If they're not present in these environments, it signals that something is wrong with the environment and it can't sustain these birds.<sup>2</sup> You know what other animal is an indicator species? **Bears!**

The health of bears gives us insight into the health of other species. Learn more about the different species of bear (there are eight!), where they can be found in the world, and hibernation.

Here are some facts about Black Bears, from the North American Bear Center in Ely, MN. (<https://bear.org/quick-black-bear-facts/>).



**Folklore:** Perhaps no other animals have so excited the human imagination as bears. References to bears are found in ancient and modern literature, folk songs, legends, mythology, children's stories, and cartoons. Bears are among the first animals that children learn to recognize. Bear folklore is confusing because it is based on caricatures, with Teddy Bears and the kindly Smokey on one hand and ferocious magazine cover

drawings on the other. Dominant themes of our folklore are fear of the unknown and man against nature, and bears have traditionally been portrayed as the villains to support those themes, unfairly demonizing them to the public. A problem for black bears is that literature about bears often does not separate black bears from grizzly bears.



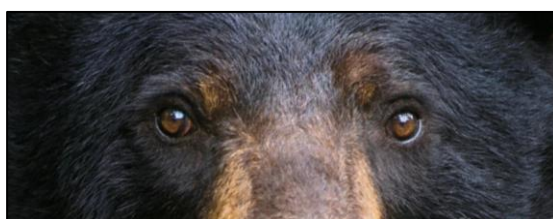
**General Description:** The black bear is approximately 4 to 7 feet from nose to tail, and two to three feet high at the withers. It has small eyes, rounded ears, a long snout, a large body, a short tail, and shaggy hair. It differs from grizzly bears in being smaller with a smaller shoulder hump, a furred rear instep, a less concave facial profile, smaller claws that are more tightly curved, and longer, smoother, and more tapered ears.

**Classification of *Ursus americanus*, the American black bear:** Kingdom: Animal, Phylum: Chordata, Class: Mammalia, Subclass: Theria, Infraclass: Eutheria, Order: Carnivora, Suborder: Fissipedia, Family: Ursidae, Subfamily: Ursinae (all bears except the giant panda and the spectacled bears), Genus: *Ursus*, Subgenus: *Euarctos*, Species: *americanus*. Taxonomists generally separate black bears into 16 subspecies based on minor differences in appearance and DNA (see website link). Taxonomists update subspecies classifications as they learn more about regional differences in DNA, body form, and behavior.

**Names:** Some black bear subspecies go by different names, like Kermode bear, Cinnamon bear, or Glacier bear, but they are all black bears. We prefer calling male and female bears simply males and females, but many people call them boars and sows, like pigs. Although pigs and black bears are both omnivores, they are not related. A group of bears is sometimes called a sloth of bears after the Middle English *slowthe*, meaning slow. The term is inaccurate because bears are not slow, lean bears can run in excess of 30 mph and few people use the term anymore.

**Range:** The American black bear is found only in North America. The population is estimated at 750,000. They live in forests as far south as Florida and northern Mexico and as far north as forests grow in Alaska and Canada. In northern Labrador, where grizzly bears no longer live, black bears range out onto open tundra where there are no trees to escape into. People are becoming more tolerant of black bears as we learn more about them. Many people are enjoying having bears live close to them where the bears were once feared and killed.

**Color:** Body fur usually black or brown but occasionally blonde, or rarely white as in the Kermode subspecies of coastal British Columbia. Brown muzzle. White chest patch is uncommon in most populations. Eyes brown (blue at birth). Skin is light gray.



**Adult Weights/Length:** Wild male black bears of breeding age usually weigh between 125 and 500 pounds, depending upon age, season, and food. Very well-fed bears can be heavier. Black bears in captivity may exceed these records. Length 50 to 80 inches long, nose to tail, with males being larger than females.

**Mating Season:** Usually from late May to early July. In the eastern deciduous forest, mating season can extend into August. Implantation is delayed until November (in certain animals the embryo does not implant during the immediate period following fertilization, but remains in a state of suspended growth (blastocyst stage), or diapause. A diapause allows for birth to occur under the most favorable of conditions.)

**Birth:** January or early February. The number of cubs in a litter is usually 2 in the western United States and 3 in the eastern United States. First litters are often only 1 or 2. Litters of 6 have been reported in several eastern states. Cubs weigh 1/2 to 1 pound at birth. By their first fall, cubs may weigh as little as 15 pounds or more than 165 pounds, depending on food supply.



Biologist showing a month-old cub, as they assess its health in midwinter during a check on the den

**Parental Care:** Cubs usually stay with their mother for 16-17 months (rarely 29 months). One to six days before the mothers are ready to mate in late May or June, they force their yearlings to stop traveling with them.

**Age at Production of First Cubs:** 2 to 11 years, depending upon food supply. Typically, 3 to 7 years. The interval between litters is typically 2 years, but it can be 3 or 4 years if food is so scarce that they have to abort their blastocysts, embryos, or fetuses. If a litter is born but dies before the mating season, the mother will mate again and produce cubs in consecutive years.

**Sex Ratio:** Nearly 50:50 at birth. Males are killed by people at a higher rate, though, so the sex ratio among mature bears is often one male per 2-5 females.

**Vision:** Bears see in color and have good vision close-up. Their distance vision (over two hundred yards) has not been tested.

**Hearing:** Exceeds human frequency ranges and probably twice the sensitivity.

**Smelling:** Their smelling ability is extremely good. The limits are untested. Their nasal mucosa area is about 100 times larger than in humans.

**Intelligence:** Large brain compared to body

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## Northwoods Journal Online

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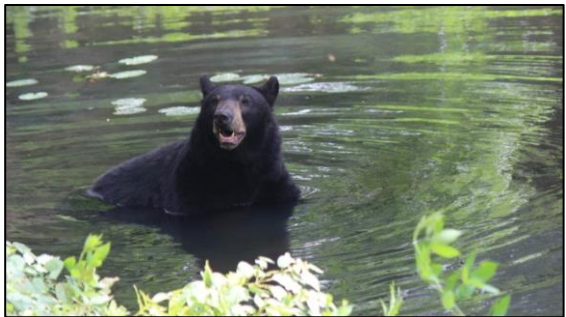


Indicators continued, from page 3

size. One of the more intelligent mammals. Navigation ability superior to humans. Excellent long-term memory. Can generalize to the simple concept level.

**Sounds:** Usually silent (except in movies in which sounds are dubbed in). A variety of grunts in amiable situations. Loud blowing noises when frightened. Clack teeth when frightened. They use a resonant, humanlike “voice” to express a range of emotions from pleasure to fear. Does not threaten by growling (except in movies). In story-telling, any sound a bear makes is called a growl.

**Swimming Ability:** Good. Speed and distance limits are untested. Can swim at least a mile and a half in fresh water. One swam more than 9 miles in the Gulf of Mexico. Can swim to island campsites.



**Running Speed:** Lean bears can exceed 30 mph. Can run uphill, downhill, or on level ground. Fat bears in winter coats overheat and tire quickly.

**Daily Activity Period:** Most bears become active a half-hour before sunrise, take a nap or two during the day, and bed down for the night an hour or two after sunset. However, some bears are active at night to possibly avoid people or other bears.

**Preferred Foods:** Nuts, acorns, fruit, insects, succulent greens. Meat and less-succulent greens are eaten when preferred foods are scarce. A scarcity of preferred foods can result in failed reproduction, stunted growth, failure to add optimal amounts of fat, and death of young bears, especially cubs.



**Do bears hibernate?** When hibernation was defined simply in terms of temperature reduction, bears were not considered hibernators. New knowledge of hibernation processes has led biologists to redefine mammalian hibernation as simply a specialized, seasonal reduction of metabolism concurrent with the environmental pressures of scarce food and low ambient temperatures.

Black bears are now considered highly efficient hibernators - they have insulative pelts and have lower surface to mass ratios than the smaller hibernators. As a result, bears’ body heat is lost very slowly, enabling them to cut their metabolic rate in half and still make it through winter, maintaining temperatures above 88 degrees—within 12 degrees of their normal summer temperature. (Excerpted from “A Bear in Its Lair” by Lynn Rogers, *Natural History Magazine*, October 1981).

Mothers wake up to give birth and take excellent

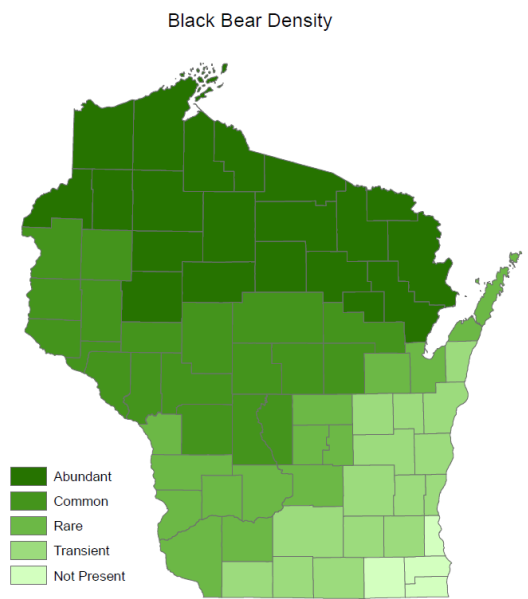
care of the cubs in the den, licking them clean and responding to every cry for warmth and milk. Wild mothers ingest their cubs’ urine and feces. They also lick up drops of meltwater, eat snow and icicles, urinate, and defecate.



**Length of Hibernation:** The length and depth of hibernation is genetically programmed to match the regional norms of food availability. Hibernation is deeper and can last over 7 months in the northern portion of the black bear range where abundant, high-quality food is available only from May through August. There, some bears hibernate so deeply, especially the leaner bears after a summer of unusually scarce food, that a person can jostle them for several minutes before they wake up. However, in southern states where food is available year-round, some do not hibernate at all, and those that do are easily aroused.

**Potential Longevity (lifespan):** Black bears can live 21-39 1/2 years or more if they are not killed. Black bears less than 16-17 months old typically die from starvation, predation, falls from trees, and other accidental causes. A very few die from parasites or disease. Very few adult black bears die of natural causes except in national parks. Nearly all adult bears die from human-related causes. A few are killed by vehicles. Most are shot. The average age at which bears are shot in Minnesota is 2 for males and 3 for females.

**Core Home Range Diameter:** Typically: Yearlings: 1-2 miles. Adult females: 2-6 miles. Adult males: 8-15 miles. Excursions to 126 miles recorded.



**Ideal Habitat:** Black bears like large forests with many different kinds of fruits and nuts. Small sunny openings within the forest provide many kinds of food for the bears. Lowlands and wetlands provide tender and juicy vegetation. Streams and woodland pools provide water for drinking and cooling. Mothers with cubs like large trees (over 20 inches in diameter) with furrowed bark (like white pines or hemlocks) for bedding sites. These trees are safest for small cubs to climb.

**Living with Bears:** Many people are moving into black bear habitat. The bears’ future depends on how well we understand and tolerate them.

**Long-Term Problem:** Magazines and movies have given black bears an unrealistically ferocious image, causing people to fear them excessively

and kill them unnecessarily. There are many misconceptions about black bears.

**Greatest misconception:** The greatest misconception about black bears is that they are likely to attack people in defense of cubs. They are highly unlikely to do this. Black bear researchers often capture screaming cubs in the presence of bluff-charging mothers with no attacks.



**Defense of cubs is a grizzly bear trait.** About 70 percent of human deaths from grizzly bears are from mothers defending cubs, but black bear mothers have not been known to kill anyone in defense of cubs.

For more about black bears, visit:

- <https://dnr.wisconsin.gov/topic/WildlifeHabitat/bearmanagement.html>
- [www.nwf.org/Educational-Resources/Wildlife-Guide/Mammals/black-bear](http://www.nwf.org/Educational-Resources/Wildlife-Guide/Mammals/black-bear)
- <https://bearwise.org/all-about-black-bears/>
- [https://animaldiversity.org/accounts/Ursus\\_americanus/](https://animaldiversity.org/accounts/Ursus_americanus/)

How to Attract More Juncos to Your Backyard



Dark-eyed juncos reappear in many parts of the U.S. as winter comes alive each year. They leave their breeding grounds in the Northwoods and the western mountains. Then they descend on backyard feeding stations across much of the U.S. To attract a whole flock of juncos, it takes a couple of feeders and the right plants to keep them full and coming back for more.

In winter, juncos feast on seeds of weeds and grasses that are left standing in your landscape or in fields, parks and open woodlands. Seeds from common plants such as chickweed, buckwheat, lamb’s-quarters and sorrel make up 75 percent of their year-round diet. But juncos also supplement with feeder foods. These snowbirds prefer to forage on the ground for millet, sunflower hearts or cracked corn that has fallen from your feeders.

Depending on where you live, juncos may look different. Those found in the eastern half of the U.S. are charcoal gray on top with white bellies and known as slate-colored types. The most common variety in the west is called the Oregon junco. Other types of juncos, like white-winged and gray-headed, are less common with limited ranges.



Juncos are part of the sparrow family. Where junco ranges overlap, you may find several types in one winter flock. Look for these dark-eyed beauties in [mixed flocks](#) with other sparrows and bluebirds. And when you do, look for their signature detail - a pretty pink bill.





## Meteor Showers in November

<https://earthsky.org/astronomy-essentials/earthskys-meteor-shower-guide#leonids>

Look up in November's night sky! You may see the moon, stars, satellites, planets, and meteors! Here are some meteor showers coming up that you may want to look for as the nights get crisper and clearer. Grab a mug of hot chocolate, a blanket, some warm clothes and lay outside and do some stargazing!



**Late night November 4 until dawn November 5, 2021, the South Taurids**

The meteoroid streams that feed the South (and North) Taurids are very spread out and diffuse. Thus the Taurids are extremely long-lasting (September 25 to November 25) but usually don't offer more than about five meteors per hour. That is true even on their peak nights. The Taurids are, however, well known for having a high percentage of *fireballs*, or exceptionally bright meteors.



*In 2015, the Taurids put on a spectacular display of fireballs which lasted many days.*

Plus, the two Taurid showers – South and North – augment each other. *In 2021, the expected peak night of the South Taurid shower happens in close conjunction with the new moon. Peak viewing is just after midnight, with absolutely no moon to ruin the display. The South and North Taurid meteors continue to rain down throughout the following week, with virtually no interference from the waxing crescent moon!*



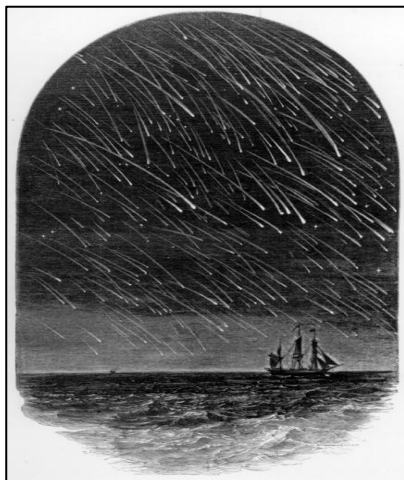
**Late night Nov. 11 until dawn, Nov. 12 - the North Taurids**

Like the South Taurids, the North Taurids meteor shower is long-lasting (October 12 – December 2) but modest, and the peak number is forecast at about five meteors per hour. The North and South Taurids combine to provide a nice sprinkling of meteors throughout October and November. Typically, you see the maximum numbers at or around midnight, when [Taurus the Bull](#) is highest in the sky. Taurid meteors tend to be slow-moving, but sometimes very bright. *In 2021, the first quarter moon sets at late night, providing dark skies from roughly midnight till dawn.*

**November 17, 2021, before dawn, the Leonids**

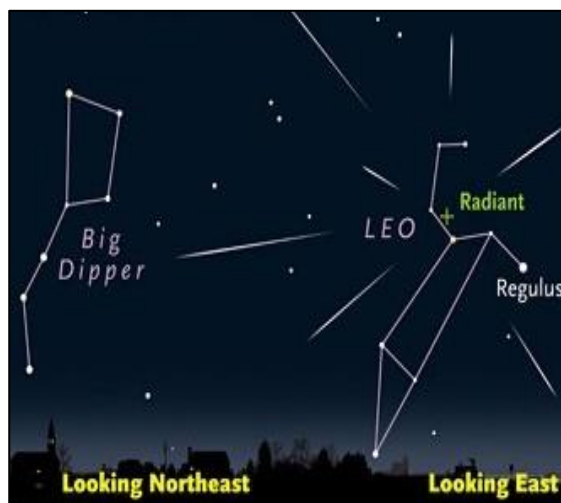
*In 2021, the expected peak night of the Leonids is from late night November 16 until dawn November 17. The bright waxing gibbous moon will be out nearly all night long. It'll set in the wee hours before sunrise. The famous Leonid meteor shower produced one of the greatest meteor storms in living memory. Rates were as high as thousands of meteors per minute during a 15-minute span on the morning of November 17,*

*1966. On that beautiful night in 1966, Leonid meteors did, briefly, fall like rain. They streamed from a single point in the sky – their radiant point – in the constellation [Leo the Lion](#) (below). Some who witnessed the 1966 [meteor storm](#) had a strong impression of Earth moving through space, fording the meteor stream.*



*Woodcut of November 12, 1799 showing the Leonid meteor shower event.*

Leonid meteor storms sometimes recur in cycles of 33 to 34 years. But the Leonids around the turn of the century – while wonderful for many observers – did not match the shower of 1966. And, in most years, the Lion whimpers rather than roars. In a typical year, you'll see a maximum of perhaps 10-15 meteors per hour on a dark night. Like many meteor showers, the Leonids ordinarily pick up steam after midnight and display the greatest meteor numbers just before dawn, for all points on the globe.



### Tips for observing the night sky

When observing the night sky, it's best to watch from a dark location. Avoid direct light from homes, street lights, and other sources. If possible, observe from a dark location away from the light pollution that surrounds cities and towns. You will see more stars after your eyes adapt to the dark – about 10-20 minutes after you go outside. Also if you need to use a flashlight, cover it with red cellophane or use a red-tinted flashlight/lens. This will preserve your night vision.

Finally, even though the moon is one of the most stunning objects to view through binoculars or a telescope, its light is so bright that it brightens the sky and makes many fainter objects hard to see. So try to observe the sky on moonless nights around the New moon or last quarter.

### For more information about meteors, visit:

- ✓ <https://www.amsmeteors.org/> - American Meteor Society
- ✓ <https://solarsystem.nasa.gov/asteroids-comets-and-meteors/> - NASA
- ✓ [www.jpl.nasa.gov](http://www.jpl.nasa.gov) - Jet Propulsion Laboratory/NASA
- ✓ <https://skyandtelescope.org/observing/best-meteor-showers-in-2021/>
- ✓ <https://www.rmg.co.uk/discover/explore/leonid-meteor-shower-when-and-where-see-it-uk> - Royal Museums Greenwich (UK)
- ✓ <https://www.space.com/33974-best-night-sky-events.html>
- ✓ <http://dublinlaurenscountygeorgia.blogspot.com/2012/11/the-night-stars-fell.html>

## Hold a Treasure Hunt for Kids!

<https://tinkergarten.com/activities/treasure-hunt>



Hunting for treasure is a universally compelling play theme for kids. And, when we take the treasure hunt outside, kids have a chance to see their outdoor space with fresh eyes and discover hidden spots nature provides. In this activity, kids create a treasure map and hide treasure for friends to find.

**Spark play with a story:** Read or watch and listen to a read-aloud of [How to Find Gold](#) by Viviane Schwartz. Wonder together if you could make your own treasure hunt. What kind of treasure might you find?

**Make a treasure map:** Offer your child a piece of paper and some markers and head outside to your outdoor play space. To make the treasure map look old, use a piece of a brown paper bag. Kids can also tear strips of paper off of the edges and crumple it up to make the map look weathered. Walk around the space together and wonder which landmarks could be added to the map.

**Collect treasures to hide:** Ask your child what treasures they might hide for others to discover. Do they have a collection of special rocks, nature treasures or even a special toy that someone would be thrilled to discover? Add an extra bit of adventure to play by wondering what kind of story you can create together for the treasure hunt - pretend the nature treasures are special gems and gold hidden by pirates, or are ingredients for a magical potion.



**Hide your treasure:** Invite your child to hide the treasure somewhere in your outdoor space. Hide treasures all together, or sprinkle around the outdoor space. Treasure can be hidden under rocks, in grass, underneath trees, bushes and other objects in the play area. Decorate a cardboard box to transform it into a treasure box. Once kids have hidden the treasure, mark the secret hidden spot or spots with an "X" on their map!

**Treasure hunt!** Hand the treasure map to friends or family members and invite them to seek out the treasure. Add in costumes or paper towel binoculars to make the hunt feel extra special. Use the treasure hunt as a spark for imaginative play. Once discovered, how could you use this treasure? What special powers does this treasure have? What adventures await those who discover it?

Hunting for treasure supports kids' focus skills and sparks creative and imaginary play. When kids create maps of their outdoor space, they see their space with fresh eyes and notice all that there is to discover. Mapmaking also supports spatial awareness.





## Wisconsin's Deer Donation Program

<https://dnr.wisconsin.gov/topic/hunt/donation.html>



Hunters can help Wisconsinites in need by donating deer harvested in Wisconsin through the DNR's deer donation program. Venison from donated deer is processed and distributed to food pantries across the state. Since the program began in 2000, hunters have donated over 94,000 deer which were processed into over 3.8 million pounds of ground venison.

Wisconsin has a network of venison donation partners including county land and water conservation departments, food pantries, charitable organizations, Hunt for the Hungry, USDA - Wildlife Services and participating processors who all help implement and administer the program.

### How to Donate your Deer

Hunters can donate any deer harvested legally in Wisconsin. Deer harvested outside Wisconsin cannot be donated. Deer harvested in a county affected by chronic wasting disease (CWD) must be tested for CWD prior to or at the time of donation (see below). Hunters, you can donate your legally-harvested Wisconsin deer to help feed needy people throughout the state by taking four simple steps:

1. Field dress your deer. Please handle the carcass as if it were destined for your own table. A couple of bags of ice placed in the cavity will help preserve the carcass in warm weather.
2. Register your deer. Make a note of your registration confirmation number, which you'll need later. Arrange for CWD testing if your deer was harvested from one of the CWD-affected counties that require testing.
3. Call ahead! Contact [one of the participating processors](#) before dropping off your deer to make sure they have space to accept it. More processors may be added later in the season, so check back if you don't see one currently in your area.
4. Drop off your deer at a participating processor.

Hunters can donate the entire deer free of charge and can retain the head and/or antlers for mounting if desired. When dropping your deer off at a processor, you will be asked to complete the log sheet indicating your desire to donate the deer.

### Chronic Wasting Disease-Affected Counties

Deer that are harvested in any CWD-affected county listed below [must be tested for CWD](#) either prior to or at the time of donation. The processed venison will be held by the processor until results are known.

- All adult deer harvested in Dodge, Dunn, Green Lake, Kenosha, Lincoln, Marathon, Marquette, Milwaukee, Oneida, Portage, Racine, Shawano, Sheboygan, Washington and Wood counties are required to be tested for CWD and;
- All adult deer and fawns harvested in Adams, Columbia, Crawford, Dane, Eau Claire, Grant, Green, Iowa, Jefferson, Juneau, Lafayette, Richland, Rock, Sauk, Vernon, Walworth, and Waukesha counties are required to be tested for CWD.

## 'Nature's Recyclers' for Kids – Meet the Critters that Help the Forest Decomposition Process!

<https://dnr.wi.gov/files/pdf/pubs/wa/CE5013.pdf>

Nature's recyclers come in many forms: snails, slugs, beetles, sow bugs, earthworms, millipedes (below), mushrooms, lichens and microbes. Each "recycler" has its own job in the decomposition (breaking down of organic matter like leaves and branches) process. Some recyclers help break down plant tissue such as leaves.



Other recyclers, like ants and centipedes, are carnivores or scavengers. They like to work where it's dark and moist. The process of decomposition provides nutrients back to the soil. The nutrients will be taken back up into the tree through its roots. These nutrients help the tree make new leaves. The leaves in turn manufacture food for the tree.

The purpose of this activity is to provide children an opportunity to learn about nature's recyclers - the organisms that break down leaves and other organic material - and help children learn how trees get nutrients from the soil. There's lots happening in the dirt - critters, fungi, and microbes are busy working to break down leaves, logs and other material, putting nutrients back into the soil.



Pillbugs feed on decaying organic matter in the soil.

Check out the area you plan to visit to make sure you can find some of nature's recyclers. (You can "plant" a log, a board, or a small pile

of leaves directly on the soil several days ahead of time to draw critters to the moist, dark place.)

### Activity - Looking for Nature's Recyclers

Materials needed:

- spoons or something to dig with
- container for viewing specimens
- hand lenses (optional)

Here are some places to look for nature's recyclers and what to look for:

**Leaf Litter:** As you look through a pile of decaying leaves or grass with the children ask them to look closely at the leaves. Compare the texture of a green leaf and an older, decaying one. What color are they? Are they wet or dry? How do they smell? Can you see any signs of chomping and chewing by nature's recyclers? Look for mushrooms, worms, beetles and millipedes.

**Old Log:** Roll over an old log. Look for decaying or rotting wood. Nature's recyclers change the old, hard wood into very soft, loose pieces that mix with the soil. Look for worms, slugs, beetles, sowbugs, millipedes and mushrooms. Be sure to return the log back to where it belongs.

**Large Rock:** Roll over a large rock. Look at the ground underneath. Is it wet or dry? Look for slugs, snails, worms and sow bugs. Roll the rock back into place when everyone is done observing.

**Underground:** Dig in soil or wood chips with old spoons. Look for worms, millipedes and sow bugs. (You might want to bring a clear container to put the recyclers in so everyone can see them.) Be sure to put the critters back where you found them and fill in any holes you made.

*View the title link for more information!*

## Nature Recycles

Here is a tree with its many parts.  
It has leaves and branches, a trunk, roots and bark.

The leaves in the fall turn from bright green to brown.  
As the weather turns cooler, they fall to the ground.

First one leaf will fall and then many more,  
As leaves become leaf litter on the forest floor.


Who'll clean up this mess? What shall we do?  
Here come nature's recyclers, nature's clean-up crew.


Why do they clean up this leaf litter mess?  
'Cause dead leaves have nutrients that they like the best.

Nutrients are like food, found in things living and dead.  
Without them nothing could grow and all life would end.


Let's meet nature's recyclers and see how they toil.  
As they break down leaf litter and add nutrients to soil.


 This is a slippery slug, a snail with no shell.  
It cleans floors of gardens, lawns and forests as well.

 This is a mushroom, a plant that's not green.  
It breaks down leaf litter and keeps the woods clean.

 This is a worm. What does it do?  
It digs under the leaves and chews them up too.

 This is a beetle with a hard black shell.  
It chomps all the leaves on the ground where they fell.

 This is a sowbug that hides in the dark.  
It munches on dead plants in your garden and park.

 This is a millipede; try counting its feet.  
It crunches up plants and keeps the ground neat.

So nature's recyclers, as they crunch, munch and chew,  
Break leaves into pieces that become nutrients too.

Nutrients in the soil make trees big and strong.  
They're sucked up by tree roots when spring comes along.

Nutrients are like food, and for trees they are good.  
They help make new leaves, strong branches and wood.

And so, last year's brown leaf, that was part of the tree,  
Was changed into food to make the new leaves you see.





## To Help Birds This Winter, Go Easy on Fall Yard Work

[www.audubon.org/news/to-help-birds-winter-go-easy-fall-yard-work](http://www.audubon.org/news/to-help-birds-winter-go-easy-fall-yard-work)



Blue Jays and other birds find more winter food in "messy" backyards.

There's a certain satisfaction in autumn chores. When the weather's right, cleaning gutters, touching up paint, or splitting some firewood can feel less like manual labor and more like a rite of the season.

But if you want to make your backyard a welcoming winter haven for birds, some fall tasks call for a laissez-faire approach. "Messy is definitely good to provide food and shelter for birds during the cold winter months," says Tod Winston, Audubon's Plants for Birds program manager. Follow these tips for a bird-friendly yard you can be proud of.

### Save the seeds.

When fall arrives, some tidy-minded gardeners might be inclined to snip the stems of perennials in the flower garden. But the seed heads of coneflowers, black-eyed Susans, and other native wildflowers provide a helpful food cache for birds. "They're almost invisible, those seeds, but birds eat them all winter long," Winston says. Grasses - not the stuff you mow, but native species like bluestems or gramas - also make for good foraging after they go to seed. And letting other dead plants stick around can fill your property with protein-packed bird snacks in the form of insect larvae, such as the fly and wasp larvae that inhabit [goldenrod galls](#).

### Leave the leaves.

You can help birds and other wildlife - and save yourself some backache and blisters - by skipping the leaf raking. "Those leaves are important because they rot and enrich the soil, and also provide places for bugs and birds to forage for food," Winston says. If a fully hands-off approach doesn't work for your yard, consider composting some leaves and letting the rest be. You could also rake them from the lawn to your garden beds, or mulch them with a mower to nourish your lawn.

Leaf litter isn't just free fertilizer - it's also a pretty happening patch of habitat for a variety of critters such as salamanders, snails, worms, and toads. "If you're digging in the garden and come upon these squirmy little coppery-brown dudes, and you don't know what they are - those are moth pupae," Winston says. A healthy layer of undisturbed soil and leaf litter means more moths, which in their caterpillar phase are a crucial food source for birds.

**Build a brush pile.** Along with shaking loose showers of leaves, blustery fall days also tend to knock down tree limbs. Rather than hauling them away, you can use fallen branches to [build a brush pile](#) that will shelter birds from lousy weather and predators. American Tree Sparrows, Black-capped Chickadees, and other wintering birds will appreciate the protection from the elements. Rabbits, snakes, and other wildlife also will take refuge there. You'll find that the pile settles and decomposes over the seasons ahead, making room for next year's additions. (And it's a great place to dispose of your Christmas tree.)



Leave native perennials standing until spring and their seed heads will provide nutrition for birds, like this American Goldfinch nibbling on bergamot seeds.

### Skip the chemicals.

You might see your neighbors spreading "weed and feed" mixtures in the fall to fertilize their lawns and knock back crabgrass and other unwanted plants. In most cases, though, grass clippings and mulched leaf litter provide plenty of plant nutrition, and using store-bought fertilizers only encourages more non-native plants to grow. Generally speaking, native grasses, shrubs, trees, and flowering plants don't need chemical inputs.

### Hit the nursery.

Although laziness can be a good thing when it comes to creating a bird-friendly backyard, it's worth putting in some hard work planting native shrubs and trees. (Cooler temperatures also make fall a more comfortable time to tear out some turf grass and expand your native plant garden.) Native dogwoods, hawthorns, sumacs, and other flowering shrubs like snowberry, (below) produce small fruits that not only feed birds during the colder months, but can also provide a welcome pop of color when winter gets drab.



Planted in the right place, evergreens like cedars and firs give birds something to eat and a cozy shelter. Fall is also a great time to liven up your property with late-blooming perennials such as asters or sages, and to buy spring- and summer-blooming wildflowers at a substantial discount. To find species suited to your yard, just enter your ZIP code in [Audubon's native plants database](#).

For more links about native plants for birds and other wildlife, visit the links below.

- ✓ <https://www.audubon.org/news/grow-these-native-plants-so-your-backyard-birds-can-feast>
- ✓ <https://xerces.org/blog/leave-leaves-to-benefit-wildlife>
- ✓ [www.healthyyards.org](http://www.healthyyards.org)

See page 10 for related information about pollinator conservation in fall.

## How to Prepare Your Garden for Winter in Two Days

Excerpts from

[www.birdsandblooms.com/gardening/gardening-basics/prepare-garden-winter-two-days/](http://www.birdsandblooms.com/gardening/gardening-basics/prepare-garden-winter-two-days/)



### Day One (morning): Trim Plants and Tidy the Garden

[Divide your overgrown perennials](#) and cut back the dead foliage on others. Remove any spent annuals and vegetables from the garden - roots and all - and add any disease-free debris to your [compost pile](#). As you yank out plants and weeds, be mindful of pests and diseases. Double-bag and discard diseased plants or foliage. Leave healthy perennials, such as purple coneflowers, black-eyed Susans, and native grasses - they provide habitat for beneficial insects and food for birds.

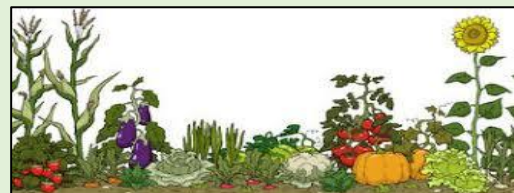
### Day One (Afternoon): Protect Your Garden and Prepare for Winter

Bring pots and non-hardy plants indoors or at least out of the elements. If you're worried about the survival of plants or pots that must stay outdoors, wrap them in blankets or burlap. As an added measure when preparing your garden for winter, surround plants with wood chips or bags of potting mix. Apply evergreen boughs or weed-free straw around your perennial and bulb plantings after the ground freezes - this keeps the soil consistently cold even during a winter thaw.

Nourish perennials and annuals by incorporating compost and shredded leaves. Protect your garden from hungry animals by placing a cylinder of hardware cloth around (not touching) the trunk of young trees and shrubs - sink it several inches into the soil to deter voles, and make sure it is at least 4-feet tall in order to keep rabbits away.

### Day Two: Plant for Spring and Maintain Tools

Fall is a great time to plant trees, shrubs, perennials and bulbs. Simply make sure you get them in the ground before the soil gets too cold so roots have time to become established. Also use this time to clean and sharpen garden tools, disinfect pots and make necessary repairs around the landscape. It will make your spring prep a breeze!



To learn more visit:  
[www.healthyyards.org](http://www.healthyyards.org) & [www.leaveleavesalone.org](http://www.leaveleavesalone.org)





## It's the 9<sup>th</sup> Annual National Bison Day

<https://nationaltoday.com/national-bison-day/>



You see them everywhere - on coins, on sports team logos, and a couple of state flags. No, we're not talking about the bald eagle. This honor is reserved for North American bison. On National Bison Day, November 6, an annual event that falls on the first Saturday in November, all Americans should reflect on the impact bison have as a part of our environmental and cultural heritage. Bison are especially revered by Native people - central to their survival as both food and spiritual inspiration.



### National Bison Day timeline

**1900s** - Bison herds severely reduced due to excessive hunting and abuses. Hunting dramatically reduced the population - leaving a mere 700 in private herds; even Yellowstone was left with only 23 bison by 1902.

**1992** - Native American tribes formed new group to share resources and help bison. The Intertribal Indian Council formed not only to return bison to tribal lands, but also to create culturally-sensitive educational programs and provide both technical resources and help to 56 tribes.

**1997** - Groups signed Bison Memorandum of Understanding. The first conservation agreement between an environmental organization and a diverse collective of Native American tribes agreed to combine efforts to return wild bison to tribal land.

**2012** - The U.S. Senate passed first National Bison Day Resolution. The Senate passed its first resolution honoring National Bison Day, which was also supported by various tribal groups and the Wildlife Conservation Society.



### Five Reasons We Love Our Bison

#### 1. Watch that tail

If a bison's tail is hanging down and moves naturally from side to side, the animal is relaxed. But when the tail stands straight up, it's a signal the bison is getting ready to charge.

#### 2. They've got skills

Given their size as the largest mammals in North America, bison are surprisingly agile with an ability to swim well, jump up to six feet, and run between 35 and 40 mph.

#### 3. They're oldies but goodies

Bison have always roamed in Yellowstone National Park as evidenced by prehistoric fossils found in modern times.

#### 4. Throw a stone — hit a bison

Herds of bison can be found in all 50 states.

#### 5. Bison as symbols

The American bison is not only the country's official mammal; the bison is also the state mammal of Wyoming, Oklahoma, and Kansas.



### Why National Bison Day is Important

#### 1. It's our national mammal

President Obama, with the support of a broad coalition of Native American tribes, wildlife support groups, and concerned members of the Senate, signed a 2015 law making the proud and majestic bison our national mammal. This law helps to protect bison from extinction and encourages a return back to their native tribal lands.

#### 2. They're different from buffalo

Bison and buffalo are not the same. Bison are native to North and South America and Europe, while the traditional home of the buffalo is in Africa and Asia. At the height of their magnificence, there were between 30 and 60 million bison in the New World circa the 16th century. Today, there are currently half a million bison roaming happily across North America.

#### 3. They were almost extinct

Native peoples once lived their lives around the vast herds of bison that swirled around areas of the west and northwest, the central plains, and the southeastern U.S. Once pioneers started their westward trek, both the Native American tribes and the bison herds were seen as obstacles to progress. As the native peoples were systematically forced off their lands by either poachers or fake government treaties, the bison herds began to disappear; by the early part of last century, bison were on the way to extinction. Today, through the collective efforts of Indian tribes, wildlife associations, the national park system and others, bison have re-emerged as a protected species.



For more about bison, visit <https://nationalzoo.si.edu/animals/news/its-bison-not-buffalo-and-other-american-bison-facts>.

## How to Recycle Halloween Pumpkins for Wildlife

After the trick-or-treaters clear away and Halloween is officially over, don't toss your pumpkins in the trash! Here are several all-natural ways to recycle them with local wildlife in mind.



### 1. Compost Your Pumpkins

If you've carved a jack-o-lantern, it may already be decomposing. Pumpkins are 90% water, which means they quickly begin breaking down once you cut into them. This makes them a great addition to your compost pile. Prevent unwanted pumpkin plants by removing the seeds first (set seeds aside for #3 and #5). If you don't have a compost bin or pile, check your local recycling center, nearby farms, or community gardens to see if they collect old pumpkins for composting.

### 2. Make a Snack-o-Lantern

You can recycle your pumpkin and turn it into a "snack-o-lantern" or a pumpkin feeder! These are easy to make and the squirrels and birds will love them. Just make sure to only use firm, fresh pumpkins. If they are getting soft and squishy or moldy, composting them is a better idea.



### 3. Share Pumpkin Seeds with Wildlife

Many birds and small mammals will eat pumpkin seeds if you offer them in your yard. Collect seeds from your pumpkins before composting them, and let the seeds dry. Don't add salt or seasoning if you're going to offer them to the wildlife. Scatter the seeds outside or put them in a platform feeder as a special treat. You can also mix them in with birdseed in your feeders – just make sure the ports are big enough for the pumpkin seeds to fit through.

### 4. Cut into Pieces for Animals

Cut your pumpkin into pieces and scatter outside as a treat for local critters. Birds will feed on the flesh pumpkins in addition to the seeds, as will squirrels, foxes, deer and other. Generally feeding mammals is discouraged, but in this case it's ok to do as a once-a-year treat for wildlife to recycle your pumpkin. Just don't do this if large animals such as bears might be attracted to your yard (in most places brown and black bears are entering their winter dormancy by the time Halloween passes) or if rats are an issue in your area.

### 5. Plant Pumpkin Seeds

Pumpkins are part of the squash family, and their flowers are a food source for pollinators. Many bee species and other insects feed on pumpkin flower nectar. Our native squash bees rely on the pollen from squash flowers as a food source for their young. In fact, squash bees are among the 30-60 percent of our "pollen specialist" native bee species that can only feed on the pollen of certain plants. So save some pumpkin seeds now to grow your own of pumpkin plants next year. They're easy to grow and low maintenance garden plants. Not only will you have your own pumpkins to carve up next Halloween, you'll "bee" feeding pollinators in the spring and summer too!







# CAMPERS CORNER

## Marinette County Parks

Our campgrounds and parks will be officially closed November 30. But that doesn't mean you have to stop exploring.... adventure at your own risk. Your annual sticker pass is good through December 31, 2021.

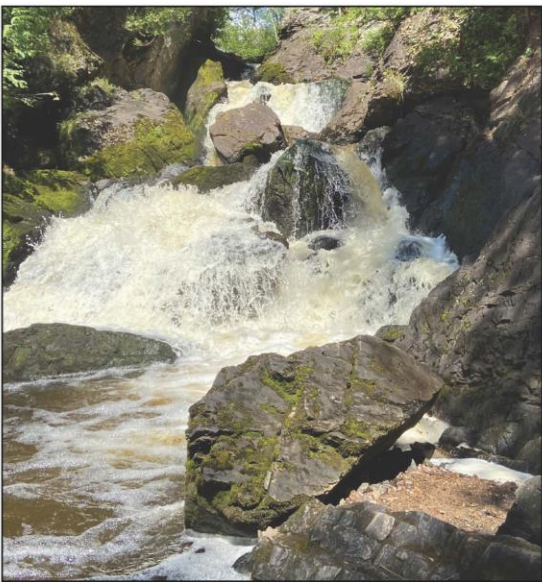
### MARINETTE COUNTY CLOSING DAY:

October 15..... Twin Bridge Park and Lake Noquebay Beach House  
Potable Water Towers at Morgan and Goodman Parks

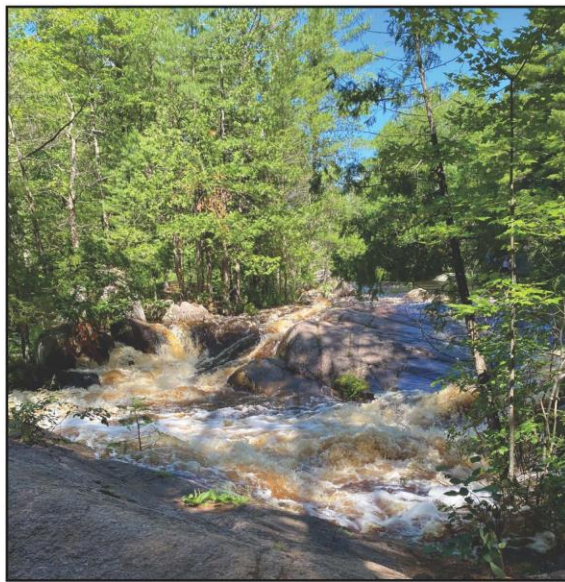
November 1..... All Lodges

November 30.....All Parks and Cabins

Long Slide Falls | Niagara, WI



Dave's Falls | Amberg, WI



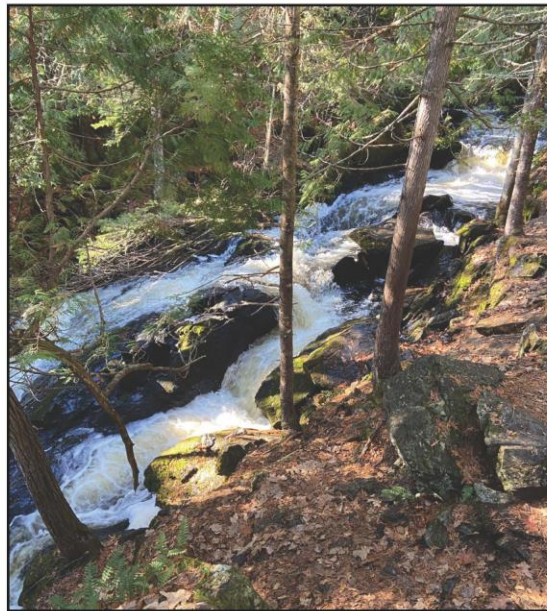
12 Foot Falls | Dunbar, WI



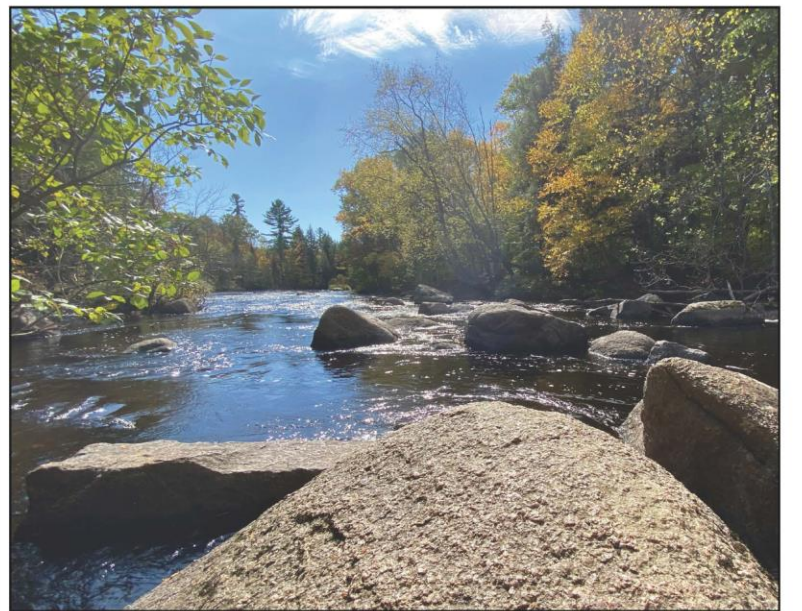
Thunder Mountain Overlook  
Crivitz, WI



Smalley Falls | Niagara, WI



McClintock Park & Campground | Athelstane, WI



Lake Noquebay Park | Crivitz, WI



Twin Bridge Park & Campground | Crivitz, WI



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Contact the Parks office at 715-732-7531 or visit <https://www.marinettecounty.com/departments/parks/general-information/campgrounds-and-parks/>



## Pollinator Conservation in the Fall Season

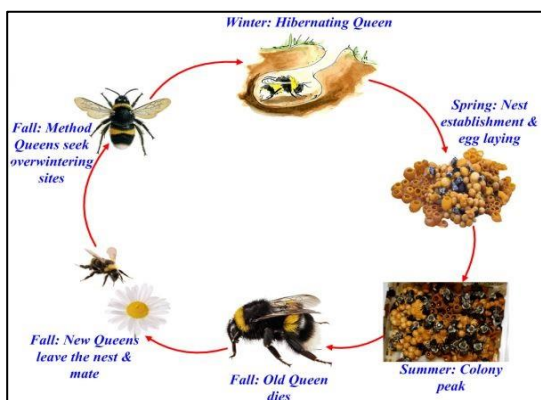
[www.albanyherald.com/local/pollinator-conservation-in-the-fall-season/article\\_1511a18e-35c2-11ec-9c80-a7a3fec79257.html](http://www.albanyherald.com/local/pollinator-conservation-in-the-fall-season/article_1511a18e-35c2-11ec-9c80-a7a3fec79257.html)



Pollinator conservation does not stop when the weather turns cool. There are a few items gardeners can add to their pollinator to-do list for the fall and early winter to help pollinators next spring.

Leaving fallen leaves in your landscape can have substantial benefits for next year's pollinators. Although turfgrass experts tell us to remove fallen leaves from our turfgrass to prevent disease-causing conditions on our grasses, those leaves can have benefits when added around perennials as a mulch or at the edge of wood lines.

In many bumblebee (*Bombus* spp.) life cycles, mated queens go into diapause — similar to hibernation — when the weather turns cold. Their metabolism slows down and their biochemistry changes to allow them to survive winter conditions. These bees look for naturalized areas just under the ground or under leaf litter to wait out the winter. To facilitate this, gardeners can make sure there are areas like this in their landscape.



Once spring arrives, the mated bumble bee queens come out of diapause and look for areas to create a nest, usually naturalized areas such as old rodent homes. Some bumble bees can create nests of up to 500 bees, and these pollinators emerge hungry and ready to pollinate a garden.

Many native bees use the hollow stems of spent flowers for nests. Leafcutter bees and orchard bees look for the hollow stems of black-eyed Susans (*Rudbeckia hirta*) or purple coneflowers (*Echinacea purpurea*) for spring nest making. Instead of throwing hollow stems on the burn pile, leave them in place or move them to another area of their landscape, like the edge of any woods. Breaking stems into segments of approximately 8 inches and gathering them in a nesting box also is effective.



Many native bees, like the leafcutter bee shown here, use hollow stems of spent flowers for their nests.

Cavity-nesting bee species look for hollow stems approximately the width of their bodies. Even small hollow stems are useful to small native bees. The bees will pay gardeners back by pollinating their 2022 gardens. Make notes on what pollinator plants performed well in 2021. Look for something spectacular when visiting a public garden to add to landscapes. Take some time to evaluate gardens, as fall is an appropriate time to plant perennials and trees.

Trees are an underappreciated part of the pollinator garden. For example, maple trees (like the red maple below) will produce thousands of nectar-rich blooms early in the spring season, and early emerging pollinators flock to their inconspicuous flowers.



When the weather really turns cold, consider learning more about native pollinators. There are several books that will help increase identification skills to help recognize more of insect visitors next year. "The Bees in Your Backyard" and "Common Bees of Eastern North America" by Joseph Wilson and Olivia Carril are useful guides for beginners and experienced insect appreciators. Learning one or two new species a year is a worthy goal.

Whether adding a new pollinator garden, decreasing insecticide use, or introducing children or grandchildren to insects, it all makes a difference.

*For more about how to help pollinators:*

- <https://hort.extension.wisc.edu/articles/pollinators/>
- <https://fyi.extension.wisc.edu/danecountycommunitydevelopment/files/2021/09/UWEX-Publication-Supporting-Native-Bees.pdf>
- <https://dnr.wisconsin.gov/topic/endangeredresources/pollinators.html>
- <https://wisconsinpollinators.com/Articles/PollinatorFriendlyTrees.aspx>
- <https://xerces.org/blog/creating-fall-bee-habitat>

## Gardening for Wildlife Enhances Bird Diversity Beyond the Backyard

<https://www.eurekalert.org/news-releases/932684>



MADISON, WI, Oct. 25, 2021 — Households manage their yards in diverse ways and new research has found that their landscaping and management decisions have the potential to increase wild bird habitat and influence bird biodiversity in their yard and also at the neighborhood and city scale.

Across the United States, bird populations are declining due to decreases in availability of habitat. Recently, a team of scientists explored the value of the biggest chunk of green space found in cities — residential yards — as wildlife habitat. A new study, "[Residential yard management and landscape cover affect urban bird community diversity across the continental USA](#)," was published this month in the journal *Ecological Applications*.

Together with partners they conducted bird diversity observations in four residential yard types and in natural parks in six cities with distinctly different climate conditions: Baltimore, MD; Boston, MA; Los Angeles, CA; Miami, FL; Minneapolis-St. Paul, MN; and Phoenix, AZ.

The researchers found similar patterns in all six cities; although urban parks support more species of conservation concern (an official designation of species whose long-term persistence is in question) compared with yards, yards certified as wildlife habitat through the National Wildlife Federation's certification program support a wider variety of bird species compared with more traditional yard landscaping (e.g., lawn-dominated yards.)



This suggests that landscape management for wildlife can contribute to region-wide bird diversity. The study also considered public interest levels based on Google searches and bird sightings and found that yards supported more popular species compared with parks.

This study shows that when people landscape with wildlife in mind, householders can contribute to conservation right in their own back yards. It will improve bird conservation efforts if we can understand which management practices are effective across regions and nationally, and which are effective at a more local level.





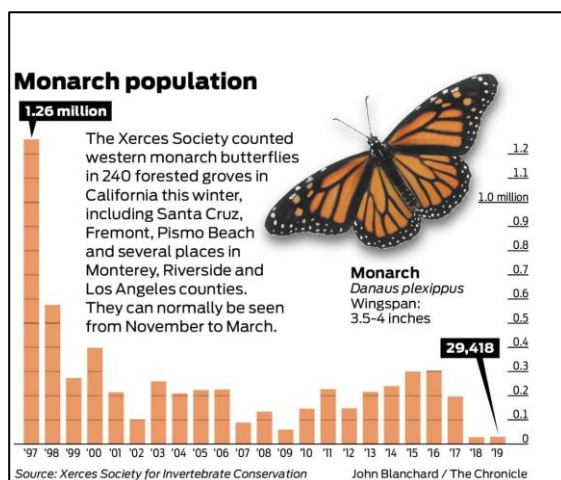
## Early Signs of Hope as Monarch Butterflies Return to California Overwintering Sites

<https://xerces.org/press/early-signs-of-hope-as-monarch-butterflies-return-to-california-overwintering-sites>



Migratory western monarchs are being reported at their overwintering sites in coastal California in greater numbers than last year, with hundreds at some sites and thousands at others, giving hope for the struggling population. These reports are particularly welcome after the population reached an all-time low of 1,914 butterflies last year.

This year's official count has not yet begun. That will take place with the help of over 100 community scientists during the 25th annual Western Monarch Thanksgiving Count, beginning on November 13. Yet these early reports signal the possibility of a rebound in numbers - at least compared to last year's historic low.



On October 16th, 2021, over 1,300 monarchs were counted at the Pacific Grove overwintering site; this site did not have a single monarch butterfly during last year's count. Pismo State Beach Monarch Butterfly Grove and an adjacent site tallied roughly 8,000 monarchs on October 20th, 2021; last year, these sites hosted less than 300 butterflies.

Additional smaller estimates and observations from volunteers and the public have started to pour in from the Bay Area, Santa Cruz, Monterey, Big Sur, Ventura, Los Angeles and elsewhere, with numbers ranging from a few to dozens to hundreds, of monarchs. Altogether, there appear to be over 10,000 monarchs easily accounted for at the overwintering sites. The low count of fewer than 2,000 monarchs in 2020 followed two years of record lows of under 30,000 butterflies each year. The number counted last year represents a 99.9% decline from the millions of western monarchs that overwintered in California in the 1980s.

"We are overjoyed that migratory monarch butterflies have not disappeared from the western U.S.," said Emma Pelton, a senior conservation biologist and western monarch lead for the Xerces Society for Invertebrate Conservation. "These early counts give us hope that, if we all work together, we can still bring western monarchs back."

The annual Western Monarch Thanksgiving Count is a volunteer-driven community science monitoring project that annually assesses the number of monarch butterflies overwintering at

groves of trees on the Pacific Coast of California and Northern Baja. The count is coordinated by the Xerces Society for Invertebrate Conservation and Mia Monroe, count founder and longtime volunteer coordinator. This is the primary way that the status of the western monarch migratory population is assessed.

**Why are numbers looking a little better this year?** It is likely a combination of factors including favorable conditions on their breeding grounds. Populations of monarch butterflies, like other insects, can fluctuate from year to year, in response to the temperature, rainfall, the availability of food, and other factors. *Though we are likely to see increases in the size of the western monarch population this year, it is likely to still be dangerously close to extinction, and there remains an urgent need to address the threats that this butterfly faces.*

"The Xerces Society and partners are focused on conservation at overwintering sites, in early season breeding areas and ensuring late season floral resources exist for migrating monarchs," said Sarina Jepsen, Director of Endangered Species and Aquatics Program at the Xerces Society for Invertebrate Conservation. "These are the actions that we and other scientists feel are the most important to successfully recover western migratory monarchs."

Western monarchs continue to [lack the legal protection](#) that would usher in resources to help recover the population, but there are many things that can be done to improve their chances. The Xerces Society along with other researchers and partners developed the Western Monarch Call to Action. It provides five key steps that if implemented quickly, can help recover the population. This rapid approach aims to complement long-term plans such as the Western Association of Fish & Wildlife Agencies [plan](#).

There are many habitat restoration projects in progress right now to enhance and restore monarch breeding and overwintering habitat in California, but more are needed. Legislation proposed in Congress including the [Monarch and Pollinator Highway Act](#) (now part of the infrastructure bill) and the [Monarch Act](#) (which focuses on western monarchs) could provide critical funding for habitat restoration and research, if passed.



For more about the western monarch, counterpart eastern populations, and how to help them, visit the sites below:

- ✓ <https://dnr.wisconsin.gov/wnmag/2019/Spring/monarch>
- ✓ <https://wiatri.net/projects/monarchs/>
- ✓ <https://wiatri.net/Projects/Monarchs/pdfs/ConservationStrategy.pdf>
- ✓ <https://www.nwf.org/Garden-for-Wildlife/About/Native-Plants/Monarch-Nectar-Guides>

## County 4<sup>th</sup> Graders Learn About Environmental Topics at Annual Environmental Field Days



WDNR Forestry Technicians Melissa Scheuerman and Jim Ivacko explain methods like trenches to help protect public lands from wildfires.

The annual Environmental Field Days (EFD) for Marinette County fourth graders was held recently over three days, with 401 total people attending (369 students, 32 teachers & chaperones) at four different sites throughout the county. It is organized by Marinette County Land Information Department staff and includes presenters from the Wisconsin Department of Natural Resources, other organizations and local volunteers. This event started in 1992 to introduce natural resources to schoolchildren.



Austin Banaszak of the Land Information Department shows duck decoys to students while discussing wetlands.

This year, EFD was held in four locations throughout the county: Marinette's City Park, Peshtigo's Badger Park, Lake Noquebay Park near Crivitz, and a site on county land in Dunbar. Small student groups rotate through stations and are presented with short, 12-minute sessions. Depending on the site, different topics were presented.



Chuck Druckrey, Water Resource Specialist with the Land Information Department, talks about aquatic invertebrates as indicators of water quality.

Topics included forestry, fire control, water quality, aquatic invasive species, insects, mammals, wetlands, composting and a talk by a WDNR Conservation Warden. Teachers received quiz questions to review information presented at each station. Water and fruit snacks were provided for event participants.

Without the support of local agencies, staff and volunteers (including presenters) this event would not be possible. The City of Marinette Parks Department, the Peshtigo Parks & Recreation Department and the Marinette County Parks and Forestry Departments provided the event sites.





# Wisconsin Wildlife Well Adapted to Survive Winter

<https://www.postcrescent.com/story/sports/outdoors/blogs/2014/12/08/wisconsin-wildlife-adapted-survive-winter/20106129/>



even fatten up for winter, but are simply adapted to the cold. Their solution during extreme cold snaps is to simply cuddle in groups inside cozy nests.

## Wings of winter

While the monarch is a migratory butterfly that escapes our winters by pushing south, several species of Wisconsin butterflies survive the winter as adults in a type of cold storage in crevices in bark, branches, buildings and other sheltered areas. Warm days, even in midwinter, can often lure species such as mourning cloaks, Milbert's tortoiseshells, question marks and commas into flight over the snow-blanketed forest. Other species of moths and butterflies survive winter in either the larval stage or as a chrysalis.



Isabella tiger moths overwinter as full-grown caterpillars and have a remarkable capability to withstand freezing temperatures.



Goldenrod gall flies overwinter as larva in ball-like structures (galls) in goldenrod stems. Some birds like downy woodpeckers will eat them in winter.

## Chilly chickadees

The tiny black-capped chickadee, along with other small winter birds, are well adapted at surviving winter. As you have probably witnessed in your own backyard, chickadees are classic hoarders, spending hours each day through much of the year sneaking seeds from feeders and storing them in bark crevices for future use. They also feed heavily on tiny insects and cocoons found in bark.

In addition, and even more fascinating, chickadees and other small birds are able to go into a controlled state of hypothermia on cold winter nights, allowing them to conserve vast amounts of energy and to experience a significant drop in body temperature each night. This state is called *torpor*. The tiny birds, which weigh about as much as a paper clip, feast on seeds and other items during the day, then use stored up fat to shiver at night to regulate their body temperature.



## Learning from wild bears

The winter activities of bears are extremely intriguing to researchers in that the bodily functions and metabolism of bears in winter torpor potentially offer hope to kidney patients and other human health conditions. Studies of



Everyone knows monarchs fly south to Mexico for the winter and bears hibernate (see page 4). But what about some of the other wildlife species found in our area? How do they manage to survive the winter season without traveling across continents to escape the chill? From butterflies to snakes, turtles to salamanders, chipmunks to frogs and toads, the Wisconsin's wildlife has adapted in amazing ways to survive winter.

For many species, winter is a preferred season, and many thrive in the cold and snow. Others, less tolerant of cold temperatures and reduced food sources, must adapt in order to make it through the harshest months. Some species literally freeze solid, while others have a natural chemical anti-freeze to keep them from doing so. Some simply fall asleep, or more precisely, enter a state of inactivity known as torpor, achieved by greatly reducing body temperature.

Many species of wildlife, including some insects, reptiles, amphibians and mammals, have been shown to reduce their body temperature even below the freezing point and still survive. The science of hibernation and torpor and all of the implications hold much hope for treatment of human health problems.



A Thirteen-lined ground squirrel hibernating.

Others remain active all season long. The science and study of winter survival grows more and more complex with each new discovery. Here's a look at some of the fascinating ways that Wisconsin wildlife species manage to make it through the coldest time of the year.

## Reptiles and amphibians

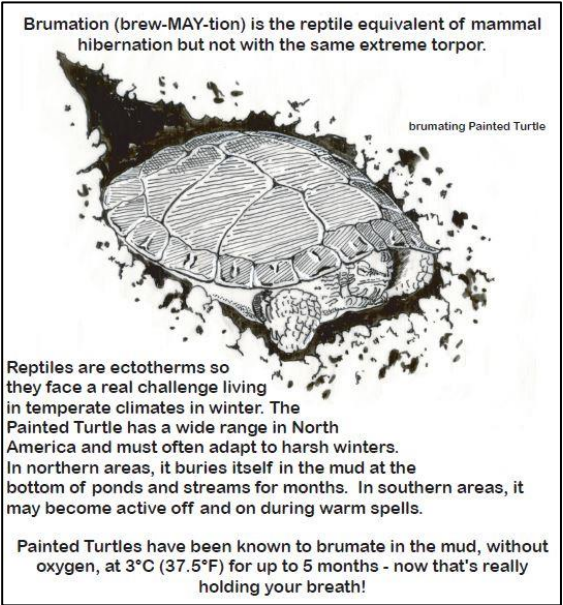
Wisconsin's many native reptiles and amphibians survive the winter months in a number of ways. Some species of snakes move to crevices in rocky ledges or outcroppings



Drawing of a snake 'hibernaculum', an underground chamber that snakes use as refuges through the winter to protect them from the cold.

where they spend the winter in relatively stable conditions below ground.

Frogs, toads, salamanders and turtles may be either terrestrial or aquatic hibernators, depending upon the species. Larger turtles, like the common snapping turtle and painted turtle, spend the winter burrowed into mud and sand wherever possible. Aquatic hibernating frogs, such as the green frog and leopard frog, do the same. In seasons where ice cover becomes too thick for too long a period, especially in smaller ponds, oxygen loss can suffocate populations of these animals as they hibernate over the season.



Several salamanders, some species of frogs and American toads hibernate on land as terrestrial dwellers, burrowing into forest litter, beneath stumps and logs and other debris to escape the cold.



Wood frogs freeze almost solid in winter and safely 'thaw out' in spring. Wood frogs are the only frogs that live north of the Arctic Circle.

**Chipmunks and squirrels** - In general, most ground squirrels, including chipmunks, woodchucks or groundhogs, hibernate for all or most of the winter. Tree squirrels, including gray squirrels, flying squirrels and red squirrels, remain active for the majority of the season. During periods of extreme cold, red squirrels may hole up underground in burrows or tree stumps for the duration of a cold snap, feeding upon caches of spruce or pine cones and other food sources they have stored throughout the year.

While chipmunks are usually not seen during the peak of the winter season, they are often active below ground, feeding on stored food and periodically entering torpor. Interestingly, flying squirrels do not store food, hibernate or



A nest of flying squirrels in a tree.



*Continued next page*



## Warmer, Wetter, Wilder: 38 Million People in the Great Lakes Region are Threatened by Climate Change

<https://theconversation.com/warmer-wetter-wilder-38-million-people-in-the-great-lakes-region-are-threatened-by-climate-change-170195>

The Great Lakes are getting warmer, wetter and wilder. These atypical conditions are amplifying other threats. [Harmful algal blooms](#) (below) are increasing in severity and geographic extent, [sewers are overflowing](#) and stormwater is flooding neighborhoods and parks. Many terrestrial organisms are shifting northwards and worsening air quality is disproportionately affecting the most vulnerable people living in cities.



The Great Lakes hold one-fifth the standing freshwater on the Earth's surface and more than 34 million people live in the basin, supporting an economy worth US\$5 trillion — if it were a country, it would be one of the largest economies in the world. And yet shoreline communities are faltering under the weight of billions of dollars in damages — and are worried that climate change will continue to make things even worse.

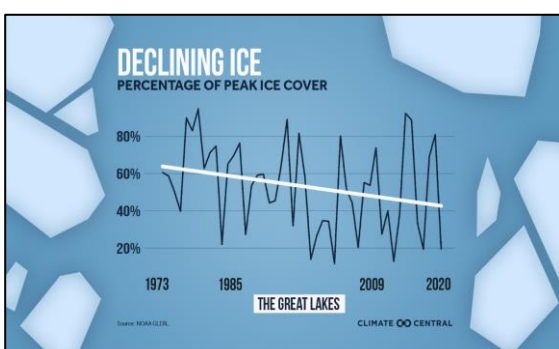
Like the Arctic's thawing permafrost, the Great Lakes basin is a key sentinel of climate change. Climate change has already immensely affected the region and [its impacts will continue to expand as the pace of climate change accelerates](#), bringing new socio-economic and environmental challenges.

During the recent UN climate conference in Glasgow (COP26), world leaders are discussing what must be done to address the climate crisis and making pledges to take specific actions. Adaptation features heavily in the COP26 agenda, including the [Glasgow Adaptation Imperative](#) to assess action taken and action needed to meet the Paris Agreement goal on adaptation and promote a more climate resilient future for all, particularly the most vulnerable communities and ecosystems.

### Climate change impacts

In the Great Lakes, climate change is considered a threat multiplier, meaning it exacerbates other threats to the ecosystem. All the Great Lakes are warming, but Lake Superior stands out. Still the coldest lake, its summer surface water temperatures increased 2.5 C between 1979 and 2006, even faster than air temperatures. Even the [deep waters of Lake Michigan are warming at a rate of 0.5 C per decade](#).

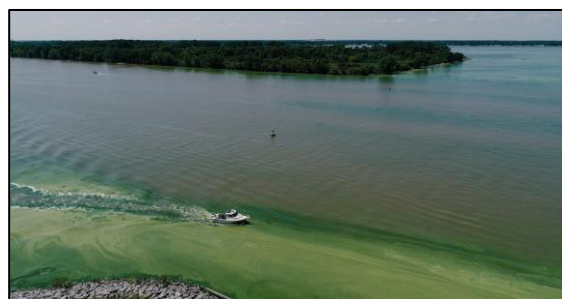
The Great Lakes have lost more than 70 per cent of their total winter ice cover over the past 50 years. That means more open water during winter, thinner ice and less of the ice fishing that is so popular with basin denizens. Less ice cover will, however, lengthen the commercial shipping season.



Overall, warming of the lakes will alter the seasonal patterns of warm and cold water layers and the dynamics of the lakes' food webs, and it will lead to greater shoreline damage from strong winter storms. In some areas within the Great Lakes basin, [water levels have risen by two meters](#), eroding shorelines, washing away houses, destroying roads, threatening infrastructure such as water treatment plants and disrupting age-old traditions of Indigenous Peoples.



Climate change is one of the leading threats to birds in the Great Lakes and North America. The [2019 Audubon Report "Survival by Degrees"](#) found that 64 per cent of bird species (389 of 604) across breeding and non-breeding seasons were moderately or highly vulnerable to climate change. As indicator species, birds are telling us the time to act is now. In addition, [climate change will likely alter](#) the range and distribution of certain fish species, increase the frequency and severity of harmful algal blooms (below), exacerbate wetland loss, create new threats from invasive species, diminish beach health and, in some cases, displace or extirpate native species.



### Urban impacts of climate change

The effects of climate change are heightened in urban areas and impose a high financial burden to municipalities. Detroit is a good example. Detroit is an old city with combined storm and sanitary sewers that overflow stormwater and raw sewage during heavy rainfall events. It also has plenty of impervious surfaces that promote runoff. Extreme rainfall events have flooded highways, streets and neighborhoods. In response, the city spent 2 million dollars in 2020 on "tiger dams", below - large, temporary, water-filled berms, to keep the water from flooding houses.



### Adapting to climate change

Many municipalities, provinces and states around the Great Lakes have been developing adaptation plans to address local impacts of climate change at a high cost. This decentralized approach comes with its own problems, like unintended cross-border effects of local adaptation or duplication of efforts. The United Nations has shown that flood

### Winter Wildlife Survival, continued

denning bears in winter show the animals are able to survive with no significant kidney damage, loss of muscle tone or bone density and mass during several months of inactivity.



A black bear emerging from its winter den.

Bears live entirely off fat reserves built up during the months and weeks leading up to entering the den. With no requirement to drink or urinate during the entire winter season, research continues into exactly what this could potentially mean for dialysis and other kidney patients. (See page 3-4, 'What is an Indicator Species', for more about bears).



A vole in the snow – they take shelter under the snow layer to get through the winter.

### More sources for winter wildlife survival information:

WDNR Environmental Education for Kids

✓ <https://www.eekwi.org/snug-snow>

National Wildlife Federation

- <https://www.nwf.org/Magazines/National-Wildlife/2014/DecJan/Animals/Hibernation>
- <https://www.nwf.org/Home/Magazines/National-Wildlife/2019/Feb-Mar/Animals/News-of-the-Wild>
- <https://www.nwf.org/educational-resources/wildlife-guide/amphibians/wood-frog>

✓ <https://www.torontozoo.com/adoptapond/snakehibernacula.asp>

✓ <https://nature.discoveryplace.org/blog/ask-a-naturalist-hibernation-vs.-brumation-vs.-estivation>

✓ <https://www.dogonews.com/2015/3/19/tiny-wood-frogs-survive-winter-by-partially-freezing-their-bodies>

✓ <https://www.flit.org/cl-wintering-strategies-of-the-black-capped-chickadee/>

✓ <https://hort.extension.wisc.edu/articles/goldenrod-gall-fly-eurosta-solidagnis/>



Red foxes will pounce into the snow, trying to catch small rodents like voles.

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## Great Lakes, continued

risk reduction strategies in one part of a basin may increase flood risks in another portion of the basin that is located in another country.

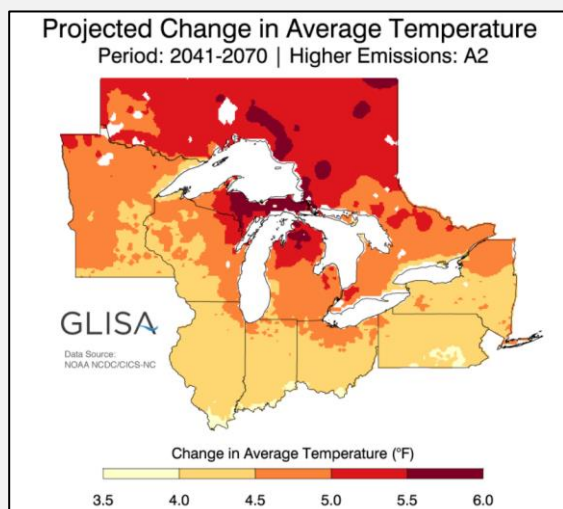
An integrated, basin-wide ecosystem approach could allow for cost-sharing of scientific studies and coordinated policy action at national and sub-national levels, leading to better adaptation. Because the Great Lakes are a shared resource among many governments, including those of Canada, the United States, eight states, two provinces and tribes, First Nations and the Métis Nation, transboundary co-operation is needed.



In 2017, the Great Lakes Water Quality Board of the International Joint Commission, an independent adviser to Canada and the United States, recommended that both countries [negotiate and develop a coordinated strategy for climate change adaptation and ecological resilience](#). These recommendations reflect strong public opinion, **yet almost five years later no comprehensive binational climate change strategy has been put into place.**

The [Great Lakes Water Quality Agreement](#) calls for strengthened measures to anticipate and prevent ecological harm, by following the precautionary principle — when human activities may lead to unacceptable harm that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm.

There is enough scientific evidence that climate change poses a threat to the entire Great Lakes region — and the 38 million people who live there. As was discussed and pledged at COP26, all must work together to limit global warming to 1.5 C, including the Great Lakes region, and all must immediately advance climate adaptation and resilience.



For more resources about climate change and the Great Lakes, visit:

- <https://dnr.wisconsin.gov/climatechange>
- <https://www.noaa.gov/education/resource-collections/climate/climate-change-impacts>
- <https://toolkit.climate.gov/regions/great-lakes>

## 100+ Fall Outdoor Activities for Kids & Families

<https://runwildmychild.com/fall-outdoor-activities-for-kids/>



As the weather cools down and the leaves put on a show, it's the perfect time to get kids outside. It may feel a bit harder to spend time outdoors with school, holidays and fall busyness, but it's more important than ever to make sure your child gets plenty of fresh air, exercise, sunshine and Vitamin N (nature). To help out, here's a giant comprehensive list of fall outdoor activities for kids! *(For the full list, visit the website above – only a few are listed here).*

1. Jump in a leaf pile – Quite possibly the most fun and quintessential fall outdoor activity there is, jumping in a leaf pile is pure joy for kids! For extra fun, rake the piles into shapes (a number that represents their age that year) and take a photo of them next to the pile from above as a keepsake.

2. Watch a football game – Spend an evening or afternoon outside cheering on your local high school (or junior high) football team. Between the actual game, the cheerleaders, dancers, mascot and marching band, football games are fun for the whole family to watch.

3. Attend a festival – Attending a festival is a really fun outdoor activity for kids and families in the fall. From fun music to fall-inspired foods, festivals are a great way to support local businesses and vendors. Check your community's local website or paper for details and find a festival that looks fun and intriguing to you.

4. Fall color hike – Make the most out of the gorgeous fall colors by taking the kids on a fall color hike! Give them a printout of the colors of the rainbow (or use paint sample cards) and have them find leaves and other items that match each color. Red, orange, green, yellow and brown will be easy. Don't have time for a long hike? This can be done nearly anywhere – even in your own backyard.



5. 'Match the tree' game – All you have to do is gather a variety of leaves from your local park or neighborhood. Challenge the kids to see how many different shapes and sizes of leaves they can find. Once you have a variety, it's up to the kids to match the leaf with the type of tree it came from. Or, have them identify the tree species by using a local field guide or nature book.

6. Make fall-scented play dough – Playdough is a fun sensory activity that can keep kids entertained and be creative. There are many non-toxic play-doh recipes out there for any age or season – try some fall scents such as cinnamon, maple, pumpkin spice, caramel apple, hazelnut, clove and nutmeg. It's easy to make and can store for quite a while in a plastic container with a lid.

7. Go horseback riding – Horseback riding is a great way to explore outdoors and get your daily dose of nature. There's also something pretty special about spending time with horses. Check your local stables for opportunities to take your kids on a horseback ride. Some stables will have an age minimum to ride solo, but many will allow younger children to ride with an adult.



8. Track the phases of the moon – Kids are naturally curious about the night sky, especially the moon. A great project to do in the fall is to track the moon's progress using a simple moon journal. Merely have your kids observe the moon each night and keep track of the changes that occur as the days go by. It takes 29.5 days for the moon to go from a new moon back to a new moon, so track for one month and then discuss your findings together.

9. Dissect a sunflower – This is a great hands-on educational project to do outside (since it can get pretty messy) to learn all about the parts of the plant. Let the kids pull off the leaves, pluck out the seeds with tweezers, cut open the thick stems and thoroughly destroy the whole thing...in the name of science, of course! Throw in some facts about pollinators and make a lesson of it, and keep some seeds to plant in spring.



10. Preserve leaves with beeswax – Ever wanted to make your fall leaves last longer so you could use them in craft projects? Preserving leaves is a really cool fall craft project for kids. The secret to preserving beautiful fall-colored leaves is using pure beeswax! Once you've collected your leaves, allow them to dry between sheets of newspaper for 1 day (any longer and they lose their color). Put books on top if you want them flat. Melt your beeswax in a double-boiler or crock pot (not boiling hot) and carefully dip your leaves into them to coat. Gently raise the leaf and allow any excess wax to drip back into the bowl. Place each leaf on the wax paper while it dries (it doesn't take long). When the leaves are cool, you can re-dip them if you want a thicker coating. Test one first though to make sure you like how it looks. Use your leaves to make a mobile or leaf suncatchers for your windows.

